

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An agitating retort, comprising:
  - (a) a shell structure;
  - (b) a drum assembly rotatable within the shell structure, said drum assembly adapted to receive containers of products to be processed within the agitating retort;
  - (c) a process fluid distribution system positioned within the drum to distribute processing fluid within the drum;
  - (d) a rotary coupling in fluid flow communication with the distribution system to direct processing fluid from the exterior of the drum to the distribution system within the drum during rotation of the drum within the shell.
2. An agitating retort according to Claim 1, wherein the drum assembly includes a hub sub-assembly coupled to one end portion of the drum assembly, said rotary coupling integrated into the hub sub-assembly.
3. The agitating retort according to Claim 2, wherein the hub sub-assembly is rotatable by a torque source supplied to the hub sub-assembly, thereby to rotate the drum assembly within the shell structure.
4. The agitating retort according to Claim 2, wherein the rotary coupling is disposed within the shell structure.
5. An agitating retort according to Claim 2, wherein said rotary coupling comprising portions defining a fluid receiving annulus in fluid flow communication with a source of processing fluid and in fluid flow communication with a processing fluid distribution system.
6. An agitating retort according to Claim 5, wherein the fluid-receiving annulus is built into the hub sub-assembly.

7. An agitating retort according to Claim 5, wherein said hub sub-assembly further comprising a distribution manifold in fluid flow communication with the fluid receiving annulus and in fluid flow communication with the process fluid distribution system.

8. An agitating retort according to Claim 7, wherein said distribution manifold is integrated into the hub sub-assembly.

9. An agitating retort according to Claim 8, wherein said distribution manifold comprising a plurality of processing fluid passageways extending from the fluid receiving annulus to the distribution system.

10. An agitating retort according to Claim 9, wherein such passageways have outlets leading to the distribution lines that extend transversely from the hub sub-assembly;

11. An agitating retort according to Claim 7, further comprises a flow controller operable within said distribution manifold to block or restrict flow of processing fluid to portions of the distribution system.

12. An agitating retort according to Claim 11, wherein portions of the distribution system restricted or blocked by the flow controller depend on the rotational direction of the drum.

13. An agitating retort according to Claim 5, further comprising a flow controller disposed between the fluid receiving annulus and the distribution system to selectively restrict or block flow of processing fluid to portions of the distribution system.

14. An agitating retort according to Claim 13, wherein restricting or blocking of the processing fluid to specific portions of the distribution system depends on the rotational direction of the drum.

15. An agitating retort according to Claim 14, wherein said flow controller is located within the fluid receiving annulus.

16. An agitating retort according to Claim 5,  
wherein said fluid receiving annulus comprises a groove formed in the hub sub-assembly, said groove being open in the radial direction relative to the hub assembly; and  
wherein said rotary coupling further comprising:  
a collar closely engaged over said groove;  
a seal arrangement disposed between said collar and said groove, said seal permitting relative rotation between the collar and said groove while restricting passage of processing fluid between the collar and said groove; and  
a processing fluid receiving inlet, located in said collar in communication with the groove.

17. An agitating retort according to Claim 16, wherein the seal arrangement comprises a seal ring positioned between each side of said groove and said collar, and a seal positioned between each of said rings and the underside of said collar.

18. An agitating retort according to Claim 17, further comprising a reaction mechanism for restricting the rotation of the collar with the rotation of the hub sub-assembly, said reaction mechanism coupled to the shell structure by a coupling system.

19. An agitating retort according to Claim 18, wherein said coupling system comprising an arm extending from said collar, said arm coupled to said shell structure.

20. An agitating retort according to Claim 16, further comprising a processing fluid supply line in communication with the collar inlet.

21. An agitating retort according to Claim 20, further comprising a flexible coupling interposed between the processing fluid supply line and the collar inlet.

22. An agitating retort according to Claim 1, further comprising a flow controller cooperative with said rotary coupling to selectively restrict or block flow of processing fluid to specific distribution lines of the processing fluid distribution system.

23. An agitating retort according to Claim 22, wherein the specific lines of the processing fluid distribution system that are restricted or blocked depend upon the direction of rotation of the drum.

24. An agitating retort according to Claim 1, further comprising a distribution manifold in fluid flow communication with the rotary coupling and in fluid flow communication with the fluid distribution system.

25. An agitating retort according to Claim 24, wherein said distribution manifold is integrated into the rotary coupling.

26. An agitating retort according to Claim 1, wherein the process fluid distribution system comprises a plurality of distribution lines disposed within the drum.

27. A process fluid distribution system for an agitating retort having a shell structure and a drum assembly rotatable within the shell structure, the drum assembly configured to receive products to be processed within the agitating retort, the process fluid distribution system comprising:

process fluid distribution outlets disposed within and carried by the drum assembly; and

a rotary coupling in fluid flow communication with the distribution system outlets to direct processing fluid from the exterior of the drum to the distribution system outlets located within the drum during rotation of the drum.

28. A process fluid distribution system according to Claim 27, further comprising at least one process fluid distribution line for interconnecting the rotary coupling with the distribution system outlets disposed within the drum.

29. A process fluid distribution system according to Claim 27, wherein the rotary coupling is disposed within the shell structure.

30. A process fluid distribution system according to Claim 27, wherein the rotary coupling comprising portions defining a fluid receiving annulus in fluid flow communication with a source of processing fluid and in fluid flow communication with said distribution outlets.

31. A process fluid distribution system according to Claim 27, further comprising a hub assembly coupled to one end portion of the drum assembly, the rotary coupling integrated into the hub assembly.

32. A process fluid distribution system according to Claim 31, wherein the hub assembly is rotatable by a torque source applied to the hub assembly, thereby to rotate the drum assembly within the shell structure.

33. A process fluid distribution system according to Claim 27, further comprising a flow controller to restrict or block the flow of process fluid to selected fluid outlets.

34. A process fluid distribution system for an agitating retort having a shell structure and a drum assembly rotatable within the shell structure, the process fluid distribution system comprising:

process fluid distribution lines disposed within the drum assembly, at least some of said distribution lines comprising outlets for directing processing fluid into the drum assembly; and

a rotary coupling in fluid flow communication with said distribution lines to direct processing fluid to the distribution system lines located within the drum during rotation of the drum.

35. The processing fluid distribution system according to Claim 34, wherein said rotary coupling is located within the shell structure.

36. The processing fluid distribution system according to Claim 34, wherein the rotary coupling comprises portions defining a fluid receiving annulus in fluid flow communication with the source of processing fluid and in fluid flow communication with the distribution lines.